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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,330	03/23/2004	Kenichi Torii	1344.1138	1752
21171 7590 04/11/2007 STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			EXAMINER ABDIN, SHAHEDA A	
			ART UNIT 2609	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/11/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/806,330

Applicant(s)

TORII ET AL.

Examiner

Shaheda A. Abdin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 8-10, 18 and 19 is/are rejected.
- 7) ☒ Claim(s) 4-7 and 11-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 03/23/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Kitajima et al.(US Pub. No: 2003/0128979 A1).

(1) Regarding claim 1:

As shown in fig. 2 and 13 Kitajima et al. discloses a quality monitoring method and apparatus of wavelength division multiplexed signal light, for monitoring the quality of a wavelength division multiplexed signal light transmitted via an optical transmission path comprising:

branching (branching at section 131, fig. 13) a part of the wavelength division multiplexed signal light being propagated through said optical transmission path as a monitor light ([0034], fig. 13);

selecting, (optical switch select the signal to be measured and send to the demultiplexer 133) as an object to be measured, a signal light of one wavelength from the signal lights of a plurality of wavelengths contained in said branched monitor light([0035], [0034], and fig. 13);

repeatedly measuring for a plurality of times the frequency of occurrences of bit error in a previously set time for said selected signal light to be measured (performance monitoring circuit 364 for evaluating clock synchronization, frame synchronization and a bit error rate regarding the electric signal obtained by the conversion, and an electrooptical signal converter 365 for re-converting the electric signal into an optical signal; the power monitor 362 issues an optical power failure alarm when power of an optical signal is lower than a predetermined value. In addition, the performance monitoring circuit 364 detects a bit error rate of an electric signal, and issues an error rate alarm when the error rate is lowered than a predetermined value, therefore, it would be inherent to measure a plurality of times the frequency of occurrences of bit error in a previously set time for selected signal light) ([0053], also see flowchart in fig. 8);

judging (judging at 310, optical performance monitor section, that monitor deterioration factor) based on said measurement results as to whether or not said signal light to be measured is deteriorated in the quality thereof, together with a deterioration factor; and outputting said judgment result as monitoring information ([0035], [0039], [0040], and fig. 2).

(2) Regarding claim 3 and 10:

wherein the judgment as to whether or not said signal light to be measured is

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deteriorated in the quality thereof is performed based on a maximum value in the frequency of occurrences of bit error repeatedly measured for the plurality of times (performance monitoring circuit 364 for evaluating clock synchronization, frame synchronization and a bit error rate regarding the electric signal obtained by the conversion, and an electrooptical signal converter 365 for re-converting the electric signal into an optical signal; the power monitor 362 issues an optical power failure alarm when power of an optical signal is lower than a predetermined value. In addition, the performance monitoring circuit 364 detects a bit error rate of an electric signal, and issues an error rate alarm when the error rate is lowered than a predetermined value, therefore, it would be inherent to measure a plurality of times the frequency of occurrences of bit error in a previously set time for selected signal light) ([0053], also see flowchart in fig. 8).

(3) Regarding claims 8:

branching (branching at section 131, fig. 13) a part of the wavelength division multiplexed signal light being propagated through said optical transmission path as a monitor light ([0031], fig. 13);

a wavelength selecting section (300, optical switch) that selects, as an object to be measured, a signal light of one wavelength (2005) from the signal lights of a plurality of wavelengths contained in said branched monitor light (optical switch select the signal to be measured and send to the demultiplexer 133) ([0035], [0034], and fig. 13) ;

a bit error measuring section (performance monitoring circuit 364, detects a bit error rate ([0053], line 22) that repeatedly measures a plurality of times the frequency

of occurrences of bit error in a previously set time for selected signal light to be measured (performance monitoring circuit 364 for evaluating clock synchronization, frame synchronization and a bit error rate regarding the electric signal obtained by the conversion, and an electrooptical signal converter 365 for re-converting the electric signal into an optical signal; the power monitor 362 issues an optical power failure alarm when power of an optical signal is lower than a predetermined value. In addition, the performance monitoring circuit 364 detects a bit error rate of an electric signal, and issues an error rate alarm when the error rate is lowered than a predetermined value, therefore, it would be inherent to measure a plurality of times the frequency of occurrences of bit error in a previously set time for selected signal light) ([0053], also see flowchart in fig. 8).

switching control section (305, fig. 13) that generates a switching signal for controlling an operation of said wavelength selecting section to measure bit error result ([0033], fig. 12 and [0035], fig. 13),

a deterioration factor judging section (310, fig.2, optical performance monitor section, that monitor deterioration factor) that judges whether or not said signal light to be measured is deteriorated in the quality thereof, together with deterioration a factor, and outputs said judgment result as monitoring information ([0035], [0039], [0040], and fig. 2).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitajima et al. (US Pub. No: 2003/0128979 A1) view of Arnold et al. (US Pub. No: 20040052524 A1)

Kitajima et al. discloses all of the subject matter describe above except a control signal generating section.

However Arnold et al. in the same field of endeavor discloses a control signal generating section (160, power controller) ([0042], fig. 2).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a control signal generation section (160) as taught by Arnold et al. into the system of Kitajima et al., so that the system can generates a control signal for adjusting the power of signal light to be measured according to monitoring information output from the deterioration factor judging section. In this configuration the system will be improved basic performance such as suppression of a power loss of an optical signal or the like and to be capable of properly switching and operating signal routes, and to be excellent in reliability, availability and serviceability. Thus, the system will provide an excellent function.

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5. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitajima et al. (US Pub. No: 2003/0128979 A1) in view of admitted prior art (Pub. No:8-321805).

Kitajima et al. discloses all of the subject matter describe above except repeater Node.

However in the admitted prior art in fig.15, discloses repeater node.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a repeater node as taught by admitted prior art into the system of Kitajima et al., so that the wavelength division multiplexed signal light can transmitted between an optical transmission section and an optical reception section via an optical transmission path and one or more repeater node. In this configuration the system will be improved basic performance such as regulate the optical power optical signal or the like and to be capable of properly switching and operating signal routes, and to be excellent in reliability, availability and serviceability. Thus, the system will provide an excellent function.

#### ***Allowable Subject Matter***

6. Claims 4-7 and 11-17 are objected to as being dependent upon a rejection base claim, but would be allowable if written in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:



Claims 4-7 and 11-14 would be allowable because the closest prior art of record (Kitajima) fails to disclose wherein said deterioration factor judging section, when judged that said signal light to be measured is deteriorated in the quality thereof, judges whether or not signal lights exist on wavelength grids adjacent to said signal light to be measured, and when the signal lights exist on the adjacent wavelength grids, repeatedly measures for the plurality of times the frequency of occurrences of bit error in the previously set time for the signal lights on the adjacent grids, and judges the deterioration factor of said signal light to be measured based on said measurement results.

Claim 15 would be allowable because the closest prior art of record (Kitajima) fails to disclose wherein the wavelength division multiplexed signal light transmitted over said optical transmission path contains signal lights of different bit rates, said wavelength selecting section includes an optical branching device for branching a signal light to be measured selected by said wavelength selecting section into a plurality of lights according to types of bit rates of the signal lights contained in the wavelength-division multiplexed signal light, and a plurality of optical receivers corresponding to the bit rates of the signal lights, and the lights branched by said optical branching device are given to said optical receivers.

Claim 16 would be allowable because the closest prior art of record (Kitajima) fails to disclose wherein said optical branching section includes a plurality of optical branching devices for branching parts of the wavelength division multiplexed signal lights being propagated through a plurality of optical transmission paths as monitor

lights, and any one of the monitor lights branched by said optical branching devices is switched in time-wise to be given to said wavelength selecting section, thereby the qualities of the wavelength division multiplexed signal lights being propagated through said plurality of optical transmission paths being monitored by time-division.

Claim 17 would be allowable because the closest prior art of record (Kitajima) fails to disclose wherein said optical branching section includes an optical branching device capable to branch parts of the wavelength division multiplexed signal lights being propagated in bi-directions through the optical transmission path as monitor lights, and one of the monitor lights corresponding to propagation directions branched by said optical branching device is switched in time-wise to be given to said wavelength selecting section, thereby the qualities of the wavelength division multiplexed signal lights being propagated in bi-directions through said plurality of optical transmission path being monitored by time-division.

### **Conclusion**

8. Any inquiry concerning this communication should be directed to the examiner at (571) 270-1673 Monday- Friday 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu, can be reached at (557) 272-3036.

Information regarding the status on an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published

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applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9799 (IN USA OR CANADA) or 571-272-1000.

**Any response to this action should be mailed to:**

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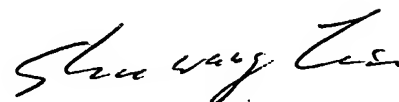
Washington, D.C. 20231

**Or fax to:**

**(703)872-9314 (for Technology Center 2600 only)**

Shaheda Abdin

04/01/2007



**SHUWANG LIU**  
**SUPERVISORY PATENT EXAMINER**

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